

# HVDC CONTACTOR



**World Class Energy Management Solutions**

## Notes

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# *Switch • Measure • Protect*

KG Technologies, founded in 1999, is dedicated to innovative development and high quality/high volume manufacturing of latching relays for the Global Energy Market. We are a preferred supplier due to our ability to provide value-add, cost-effective solutions to our customers with the highest quality global standards, and flexible delivery. For our customers, this translates into significant savings in cost.

In 2015, Hongfa Group, the largest latching relay manufacturer in the world, acquired KG Technologies, broadening our product line with a variety of products including power and signal relays, HVDC contactors, current transformers, and smart circuit breakers.

The combined companies have become the largest producer of latching relays in the world. As we continue to grow, we will add additional Energy Management Solutions to our portfolio.





### **KGT Relays are the Leading Solutions for the Following Markets**

- Utility Power Management
- Building Energy Management
- Renewable Energy and Energy Storage
- Electrical Vehicle and EV Charging

From metering to monitoring applications KGT is the market leader with decades of experience in delivering high quality solutions.

### ***Our Relays Offer the Best Value in the Market***

Designed, built, and tested to meet the industry's highest performance standards, KGT relays offer the best value in the market.

KGT, with headquarters in the USA, is a global company with an experienced sales and engineering team, ready to provide solutions to meet our customer's highest expectations.

***KG Works With You So That Our  
Products Work For You!***



### The Hongfa Group



### Hongfa is the Industry Leader in Relay Design, Development, Manufacturing and Testing

The Hongfa Group was founded in 1984 and has established a full-range and well-equipped industrial system by upholding the company spirit of “persevere for progress; strive for excellence”. Hongfa has set up three relay R&D facilities and multiple production factories with nearly 14,000 employees globally. Hongfa products cover various product segments including relays, low-voltage and high-voltage devices, capacitors, precision parts and automatic production equipment, which are widely used in industrial, energy, transportation, telecommunication, home appliance, and medical areas.

- Over 35 years of experience in R&D and production
- 30 Subsidiaries globally
- Over 1 million square meters of plants
- 14,000 employees worldwide
- Two billion relays shipped annually



### HVDC Contactors

KG HVDC contactors bring reliability to DC applications, which include Electric Vehicles, EV power charging devices, wind/power/solar systems, DC power servers, energy storage systems and 48Vdc battery systems. Available in Ceramic Chambers or Epoxy Sealed depending upon your application.

### Electric and Hybrid Vehicles

HVDC contactors are one of the key components in the manufacturing of alternative energy vehicles. Not only EV (Electric Vehicles) but also HEVs, PHEV/PEVs, and fuel cell vehicles as well. HVDC relays are used in various other applications as well:

- Main Relays (circuit protection)
- Fast Charge Relays (control of fast charging process)
- Auxiliary relays (a/c, heating systems, DC/AC converters)
- HV pre-charge relays (pre-charge circuits)

### Energy Storage Solutions

With global energy usage on the rise, along with increased energy costs, consumers and businesses are using Distributed Generation (DG) strategies to export a surplus of energy stored in electric vehicles back into the utility grid to reduce energy usage from non-renewable energy sources.



## HVDC Contactors - Ceramic







Part Number	Continuous Current (DC)	Max Switching Voltage (DC)	Max Contact Resistance	Coil Power	Certification	
HFE80V-20B	20A	750V	$\leq 5\text{m}\Omega$ (at 20A)	3W		
HFE80V-20C	20A	750V	$\leq 5\text{m}\Omega$ (at 20A)	3W	UL 508	
HFE80V-20D	20A	750V	$\leq 5\text{m}\Omega$ (at 20A)	1.8W		
HFE80V-40	40A	750V	$\leq 5\text{m}\Omega$ (at 20A)	3W	UL 508	
HFE80V-60	60A	200V	$\leq 1.5\text{m}\Omega$ (at 20A)	3W	UL 508	
HFE80V-100B	100A	60V	$\leq 1.5\text{m}\Omega$ (at 20A)	3W		
HFE80V-200	200A	250V	$\leq 1\text{m}\Omega$ (at 20A)	6W	UL 508	
HFE82V-20	20A	1000V	$\leq 4.5\text{m}\Omega$ (at 20A)	2.6W		
HFE82V-40	40A	750V	$\leq 3\text{m}\Omega$ (at 40A)	3W		
HFE82V-60	60A	750V	$\leq 1\text{m}\Omega$ (at 60A)	4.5W	UL 60947-4-1	








## HVDC Contactors - Ceramic

Part Number	Continuous Current (DC)	Max Switching Voltage (DC)	Max Contact Resistance	Coil Power	Certification	
HFE82V-60B	60A	1000V	$\leq 1\text{m}\Omega$ (at 60A)	5.2W		
HFE82V-100D	100A	750V	$\leq 0.5\text{m}\Omega$ (at 100A)	5.5W		
HFE82V-150D	150A	750V	$\leq 0.5\text{m}\Omega$ (at 150A)	5.5W		
HFE82V-150F	150A	750V	$\leq 0.5\text{m}\Omega$ (at 150A)	6W	UL 60947-4-1	
HFE82V-200B	200A	750V	$\leq 0.5\text{m}\Omega$ (at 200A)	6W		
HFE82V-200D	200A	750V	$\leq 0.5\text{m}\Omega$ (at 200A)	5.5W		
HFE82V-200W	200A	750V	Main contacts $\leq 0.5\text{m}\Omega$ (at 200A) Auxiliary contacts $\leq 100\text{m}\Omega$ (at 0.5A)	6W		
HFE82V-250	250A	750V	$\leq 0.2\text{m}\Omega$ (at 250A)	6W		
HFE82V-250C	250A	1000V	$\leq 0.5\text{m}\Omega$ (at 250A)	6W		
HFE82V-300C	300A	1000V	$\leq 0.5\text{m}\Omega$ (at 300A)	6W		

## HVDC Contactors - Ceramic

Part Number	Continuous Current (DC)	Max Switching Voltage (DC)	Max Contact Resistance	Coil Power	Certification	
HFE82V-400M	400A	750V	$\leq 0.25\text{m}\Omega$ Typ.: $0.15\text{m}\Omega$ (at 400A)	6W		
HFE82V-600	600A	750V	$\leq 0.15\text{m}\Omega$ (at 600A)	50W Driving (0.2s) 10W Holding		
HFE82V-1000	1000A	1200V	$\leq 0.2\text{m}\Omega$ (at 1000A)	50W Driving (0.2s) 10W Holding		
HFE82P-20	20A	1500V	$\leq 4.5\text{m}\Omega$ (at 20A)	2.6W	TUV & CE, UL 60947-4-1	
HFE82P-60B	60A	1000V	$\leq 1\text{m}\Omega$ (at 60A)	5.2W	UL 60947-4-1	
HFE82P-200B	200A	750V	$\leq 0.5\text{m}\Omega$ (at 200A)	6W	UL 60947-4-1	
HFE82P-250	250A	750V	$\leq 0.2\text{m}\Omega$ (at 250A)	6W	UL 60947-4-1	
HFE82P-250C	250A	1000V	$\leq 0.5\text{m}\Omega$ (at 250A)	6W	UL 60947-4-1	
HFE85V-300M	300A	1000V	$\leq 0.25\text{m}\Omega$ (at 200A)	60W Driving 4.3W Holding		
HFE85P-150	150A	1000V	$\leq 0.3\text{m}\Omega$ (at 150A)	26W Driving 3W Holding	TUV & CE, UL 60947-4-1	

## HVDC Contactors - Ceramic

Part Number	Continuous Current (DC)	Max Switching Voltage (DC)	Max Contact Resistance	Coil Power	Certification	
HFE85P-250	250A	1000V	$\leq 0.3\text{m}\Omega$ (at 200A)	26W Driving 3W Holding	TUV & CE, UL 60947-4-1	
HFE85P-300	300A	1000V	$\leq 0.3\text{m}\Omega$ (at 200A)	26W Driving 3W Holding	TUV & CE, UL 60947-4-1	
HFE88P-150	150A	1500	$\leq 0.3\text{m}\Omega$ (at 150A)	50W Driving 5W Holding	TUV & CE, UL 60947-4-1	
HFE88P-250	250A	1500V	$\leq 0.3\text{m}\Omega$ (at 250A)	50W Driving 5W Holding	TUV & CE, UL 60947-4-1	
HFE88P-350	350A	1500V	$\leq 0.3\text{m}\Omega$ (at 350A)	50W Driving 5W Holding	TUV & CE, UL 60947-4-1	

*KG Technologies, Inc. reserves the right at all times to modify and improve specifications without prior notification. This chart is subject to change as UL Status are modified.*












## HVDC Selection Guide

New Energy Vehicle Application					
	Main Relay	Precharge Relay	Fast Charge Relay	Normal Charge Relay	Auxiliary Relay
<b>EV/PHEV Automobile</b>	HFE82V-100D HFE82V-150D HFE82V-150F HFE82V-200B HFE82V-200W HFE82V-250 HFE82V-250C HFE82V-300C HFE82V-400M HFE85V-300M	HFE82V-20 HFE82V-20B HFE82V-20C HFE82V-20D	HFE82V-150D HFE82V-200W HFE82V-250 HFE82V-250C HFE82V-300C HFE82V-400M HFE85V-300M	HFE80V-40 HFE82V-40	HFE80V-20B HFE80V-20C HFE80V-40 HFE82V-40
<b>HEV Automobile</b>	HFE82V-60 HFE82V-100D HFE82V-150D	HFE80V-20B HFE80V-20C HFE80V-20D			HFE80V-20B HFE80V-20C HFE80V-40
<b>Bus</b>	HFE82V-250 HFE82V-250C HFE82V-300C HFE82V-600	HFE82V-20 HFE82V-40	HFE82V-300C HFE82V-400M HFE82V-600	HFE82V-150D	HFE82V-20 HFE82V-40 HFE82V-100D
<b>Mild EV (Low speed)</b>	HFE80V-200 HFE82V-60 HFE82V-60B HFE82V-150D HFE82V-200B	HFE80V-20B HFE80V-20C HFE80V-20D	HFE80V-200	HFE80V-20B HFE80V-20C HFE80V-40 HFE80V-60	HFE80V-20B HFE80V-20C HFE80V-40 HFE80V-60
<b>Logistic Vehicle</b>	HFE82V-150D HFE82V-200B HFE82V-250C	HFE80V-20B HFE80V-20C HFE80V-20D		HFE80V-20B HFE80V-20C HFE80V-40	HFE80V-20B HFE80V-20C HFE80V-20D












PV and Energy Storage Application			
Relay	HFE82P-20 HFE82P-60B HFE82P-200B HFE82P-250 HFE82P-250C	HFE85P-150 HFE85P-250 HFE85P-300	HFE88P-150 HFE88P-250 HFE88P-350



## HVDC Contactors - Epoxy

Part Number	Continuous Current (DC)	Max Switching Voltage (DC)	Max Contact Resistance	Steady State Coil Power	Certification	
HFZ16V-200P	200A	900V	$\leq 0.5\text{m}\Omega$ (@ 200A)	3W	UL 508	
HFZ16V-250E	250A	900V	$\leq 0.5\text{m}\Omega$ (at 250A)	2W		
HFZ16V-250P	250A	900V	$\leq 0.2\text{m}\Omega$ (@ 6Vd-c/250A)	3W		
HFZ16V-300	300A	1000V	$\leq 0.5\text{m}\Omega$ (at 300A)	2W	UL 508	
HFZ16V-300P	300A	900V	$\leq 0.5\text{m}\Omega$ (at 300A)	2W		
HFZ16V-400	400A	750V	$\leq 0.5\text{m}\Omega$ (at 400A)	2W		
HFZ17V-50	50A	900V	$\leq 30\text{m}\Omega$ (typical 1m $\Omega$ )(6V,20A)	3.8W		
HFZ18V-100P	100A	900V	$\leq 30\text{m}\Omega$ (typical 1m $\Omega$ )(6V,20A)	5.8W		
HFZ18V-150P	150A	900V	$\leq 30\text{m}\Omega$ (typical 1m $\Omega$ )(6V,20A)	5.8W		
HFZ20V-150P	150A	200V	$\leq 30\text{m}\Omega$ (typical 0.5m $\Omega$ )(6V,20A)	6W		
HFZ20V-200P	200A	200V	$\leq 30\text{m}\Omega$ (typical 1m $\Omega$ )(6V,20A)	5.8W		

## HVDC Contactors - Epoxy

Part Number	Continuous Current (DC)	Max Switching Voltage (DC)	Max Contact Resistance	Steady State Coil Power	Certification	
HFZ16V-30	50A	900V	$\leq 30\text{m}\Omega$ (typical $1\text{m}\Omega$ )(6V,20A)	3.8W		
HFZ16V-50	50A	900V	$\leq 30\text{m}\Omega$ (typical $0.5\text{m}\Omega$ )(6V,20A)	2.W	UL 508	
HFZ16V-50-E	50A	900V	$\leq 30\text{m}\Omega$ (typical $0.5\text{m}\Omega$ )(6V,20A)	6W		
HFZ16V-50P	50A	900V	$\leq 30\text{m}\Omega$ (typical $0.5\text{m}\Omega$ )(6V,20A)	6W		
HFZ16V-50P-2SH	50A	900V	$\leq 30\text{m}\Omega$ (typical $0.5\text{m}\Omega$ )(6V,20A)	6W		
HFZ16V-100	100A	900V	$\leq 0.5\text{m}\Omega$ (@ 6Vd-c/20A)	6W	UL 508	
HFZ16V-100E	100A	900V	$\leq 0.5\text{m}\Omega$ (@ 6Vd-c/20A)	6W		
HFZ16V-100P	100A	900V	$\leq 0.5\text{m}\Omega$ (@ 20A)	6W		
HFZ16V-100P-2SH	100A	900V	$\leq 0.5\text{m}\Omega$ (@ 20A)	6W		
HFZ16V-150E	150A	900V	$\leq 0.5\text{m}\Omega$ (@ 150A)	2W		
HFZ16V-150P	150A	900V	$\leq 0.5\text{m}\Omega$ (@ 150A)	2W		

KG Technologies Inc.'s commitment is to ensure that our services and products consistently meet our customers' expectations, delivered on time and defect free.

We also ensure that our products are compliant with all relevant statutory and regulatory requirements including those from IEC, ANSI and UL regulatory bodies.

Our various product delivery teams are highly skilled and are focused in ensuring that through innovation and creativity we are committed on continual improvement of our product quality and reliability, as well as the efficiency of our service offerings.

### ***Production Quality Standards***

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**RoHS** - KG conforms to the requirements of the RoHS directive (2011/65/EU). This directive specifies the restrictions of the use of hazardous substances in Electrical and Electronic markets in Europe.

**REACH** - The European Union's REACH Directive (EC 1907/2006) is designed to regulate the Registration, Evaluation, Authorization and Restriction of Chemical Substances.

**Conflict Minerals Policy** - We are committed to support ending the violence and human rights violations in the mining of certain minerals from a location described as the "Conflict Region."

In addition to our commitments, we must meet regulatory obligations. For more information view our statement at [www.kgtechnologies.net](http://www.kgtechnologies.net) - Environmental Policies Page.

## Global Contacts

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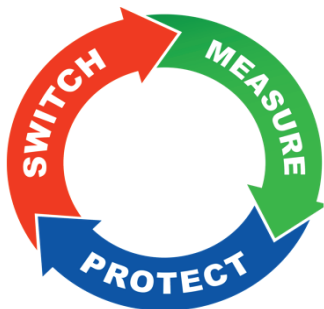
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***We Speak Your Language!***  
***KG Technologies, a Diversified Company***  
***Serving a Diversified Customer Base Globally***



***We strive to provide our customers  
with commitment, teamwork and respect!***



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